

NASA Ice, Cloud, and Land Elevation Satellite-2 Mission Applications

Quarterly Newsletter | September 10, 2021



A trillion reasons to rejoice.

As the [ICESat-2 mission](#) approaches its third year on orbit, the ATLAS lidar instrument is closing in on **one trillion laser shots**. Both the spacecraft and the instrument remain healthy and performing nominally. Over the last several months, additional along-track data (currently Release 004) has been released, and the [National Snow and Ice Data Center \(NSIDC\)](#) now has data through July 15th, 2021. The higher level products continue to appear, including the [first release of the monthly gridded sea ice thickness](#) product developed by Dr. Alek Petty (UMD/NASA). Looking forward, the mission continues to work on Release 005, which includes a number of updates and fixes across the data product suite. Release 005 should be available at NSIDC in late 2021.

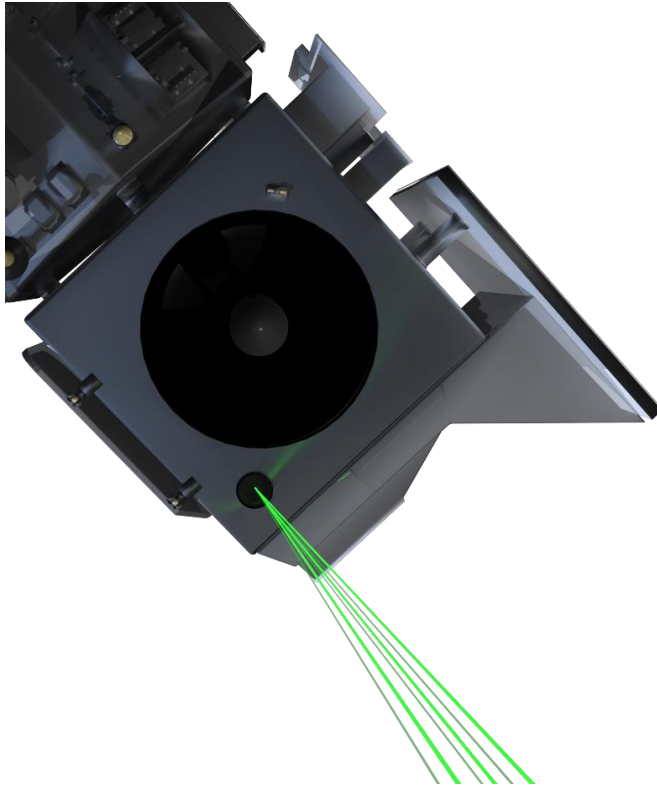
We are also very excited to announce the **upcoming release of ICESat-2 QuickLook products**. Several of our Early Adopters contributed feedback pre-launch of the mission on their [low-latency](#) needs for applications such as operational sea ice forecasting to aid navigation and flood event response. This feedback contributed to a proposal submitted to the Satellite Needs Working Group (SNWG), which has led to the development and generation of low latency products to be released this fall via the NSIDC.

Lastly, we hope to see many of you at this fall's [American Geophysical Union meeting](#), either virtually or in person! The mission will host a poster session on new science advances with ICESat-2 and our yearly applications town hall to highlight your innovative applied research.

More great news and additional information below!

Best,

The [ICESat-2 Applications Team](#)



Re-imagine the possibilities

ICESat-2's high quality and high resolution data has been invaluable to filling in the gaps in observations globally and has contributed to advancing the information available to applications in areas such as water resources management, sea ice forecasting, and wildland management. But, what if the data products were available quicker? We know from our Applied Users that it can mean a difference between using the data for validation to actually ingesting it for operational use.

We invite you to reimagine your use of ICESat-2 as new expedited data is made available this fall via the NSIDC. We expect QuickLook ICESat-2 products to be available at ~ 3 day latency, beginning with the atmospheric science data products, and adding additional products in the following months.

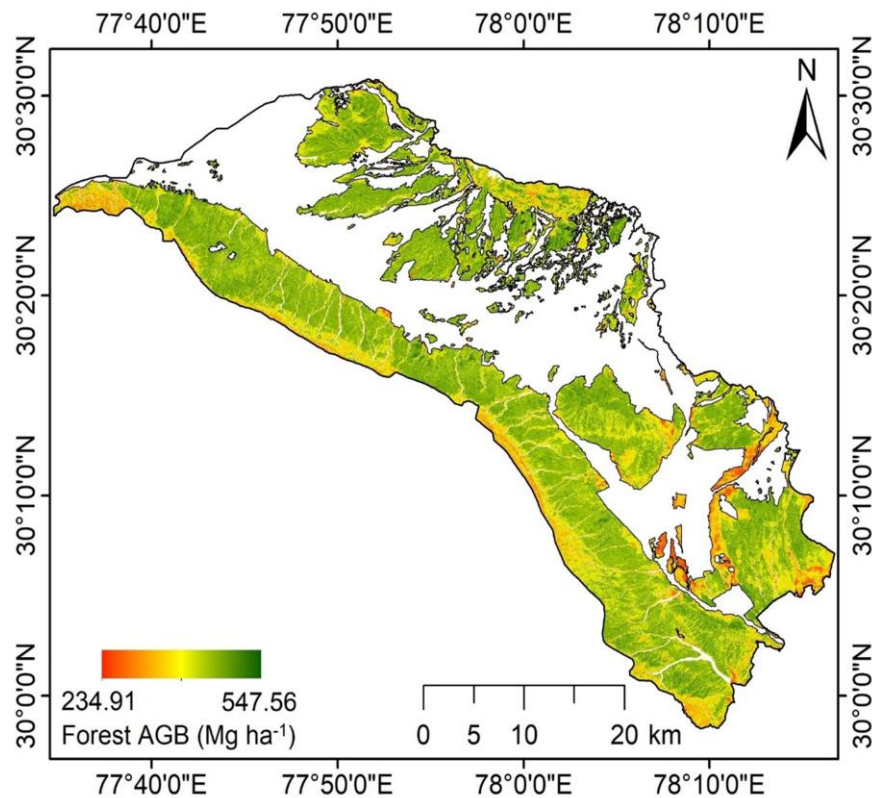
If you haven't already, we encourage you to sign up to the [NSIDC mailing list](#) to receive updates about the ICESat-2 data. NSIDC will send you and email as each QuickLook product is released.

[Access ICESat-2 Data](#)

Applications

Spotlight

Mapping Forest Height and Aboveground Biomass in the Himalayan Foothills of India



In this new study, [Dr. Subrata Nandy, Indian Institute of Remote Sensing, Indian Space Research Organization](#), and colleagues conduct the first-ever attempt to map the forest canopy height and forest aboveground biomass using ICESat-2 data in the deciduous forests of the northwest Himalayan foothills of India. Using a multi-sensor approach and Random Forest machine learning algorithm, the study demonstrates forest canopy height map generation by the integration of ICESat-2 and Sentinel-1 data and an improved accuracy in the estimation of forest biomass. The study points to a huge potential for using ICESat-2 in mapping and monitoring forest canopy height of high biomass density tropical forests, which would enhance our understanding of the role of forests in the global carbon budget and climate.

[Access Publication](#)



ICESat-2 Welcomes Dr. Sérgio Rui Godinho as New Applied User

As an Applied User, Dr. Godinho is leading assessment of the main capabilities of ICESat-2 in retrieving vegetation height and vertical structure information to develop and test a multi-source satellite approach for mapping fuel-related variables in Portugal. The lack of accurate and high resolution maps representing key-fuel related variables at a national scale has limited the implementation of an effective decision-making process for fire prevention and planning in the country. With his research Dr. Godinho will address the urgent need to adapt existing fire management policies to the new fire regimes imposed by climate change. His goal is to generate accurate and timely information of fuel-related variables with remote sensing-based methodologies to better support fire and fuel management decisions.

[**Learn More about Dr. Godinho**](#)

[**Become an ICESat-2 Applied User**](#)



Fostering Interagency Partnerships to Advance Earth Observation-based Land Management

Early this year both Birgit Peterson, Geographer with the U.S. Geological Survey Earth Resources Observation and Science Center, and Amanda Armstrong, Senior Research Scientist for Universities Space Research Association working in Goddard's Earth Science Technology and Research (GESTAR) Program, become new co-chairs of the recently renamed, Applied Earth Observation Innovation Partnership (AEOIP).

This Fall, the AEOIP will host a series of webinars to highlight available Earth observation missions and data, including ICESat-2, to demonstrate their utility to address land management needs. The webinars will share successful applications of Earth observations into operational land management decision-making and set the stage for a (hopefully face-to-face) workshop in early 2022.

We welcome you to revisit the goals and outcomes of the AEOIP and to join us at one of the upcoming webinars. More information, including upcoming updates on the webinars, can be found in the AEOIP website.

[Visit the AEOIP website](#)

SATELLITE-DERIVED BATHYMETRY WEBINAR

28 September 2021, 16:00 UTC

CONTENT

SDB Basics & Beyond Hydrographic Office Use of SDB
Applications & Use Cases SDB Data Management
Hydrological Time Series Derived Products & Charting
SDB DaaS & SaaS Technological Advancements
Hydrographic Applications of EO Data

An Opening Speech on the Role of SDB in Hydrography will be given by a NOAA Representative (TBD).

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Sign Up Link:

<https://forms.gle/UN9uGQdJhAp8HJGQ9>

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TCarta has just announced a webinar on satellite-derived bathymetry to be hosted on September 28, 2021. TCarta's portion of the webinar will discuss the utilization and integration of bathymetry data derived from ICESat-2 with multispectral imagery for seafloor depth modelling, as well as some analysis of ICESat-2 bathymetry data performance in general.

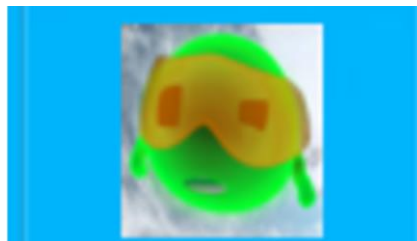
[Sign-up for Webinar](#)

Discover ICESat-2

Are you familiar with the ICESat-2 tools and resources shown below? If not, you are missing out! Learn more by clicking on the images or by following the link the suite of ICESat-2 tools available via the NSIDC.



icepyx software library and a community



PhoREAL (Photon Research and Engineering Analysis Library) geospatial analysis toolbox

Access all ICESat-2 Tools

You are receiving this newsletter because you have expressed interest (at a meeting, conference or via email) in becoming involved with the ICESat-2 mission pre-launch application efforts.

Your participation in the ICESat-2 Applications Community helps the mission learn about research relevant to the mission goals, identify new applications for ICESat-2 data products and develop new opportunities to collaborate on exciting research relevant to policy, business, and operational activity needs.

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